

ABSTRACT

An atomic layer deposition process that reduces defective bonds formed when depositing atomic layers on a substrate or atomic layer when forming an integrated circuit device. As the layers are formed, a substrate or previous layer is exposed to a first reactant. After the substrate or layer has reacted with the first reactant, the substrate or layer is exposed to a second reactant. During or after exposure to the second reactant, electromagnetic radiation is applied to the substrate or layer. The electromagnetic radiation excites any defective bonds that may form in the deposition process to an energy level high enough to cause the elements forming the defective bonds to react with other elements contained in the second reactant. The reaction forms desirable bonds which attach to the substrate or previous layer to form an additional new layer.